

**Capitellids (Polychaeta: Capitellidae) from the continental shelf of the Gulf of California, México, with the description of a new species, *Notomastus angelicae***

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*Abstract.*—In this study 11 species of capitellids in 6 genera are recorded from the continental shelf of the Gulf of California. The genus *Notomastus* is represented by 5 species, among them *Notomastus angelicae* is described.

The Gulf of California is located approximately between 21°–32°N and 107°–114°W, in the northwestern region of Mexico. Shaped as a semiclosed basin, it has only one opening connecting it to the Pacific Ocean at its southern end. Due to its geographic location and the fact that several water masses are known to penetrate it (subarctic, tropical and subtropical) it is one of the most ecologically complex systems in Mexico. A large variety of habitats for the fauna (which can be locally highly diversified) can be found there. The polychaetes and, in particular, the capitellid family is no exception to this: 28 species in 13 genera have been recorded so far in the continental shelf of the Gulf in addition to six species from deep waters. Among these, 10 species in six genera were identified for this study, in addition to the new species, *Notomastus angelicae*, herein described.

Capitellids are among the most common and widely distributed families of polychaetes worldwide. Found mainly in soft bottoms, they can occur in a large variety of sedimentary types and from intertidal to abyssal depths (Ewing 1984a). However, despite the relatively large number of species so far recorded in this family for the Gulf of California, our benthic studies of the region indicate that this is not an abundant family in the area (Hernández-Alcántara 1992).

Capitellids are known to be morphologically relatively simple organisms which is partly why their correct taxonomic identification is difficult. They were the first polychaetes identified, Fabricius being the first to record in 1780 the species *Capitella capitata* (as *Lumbricus capitatus*). Since then, approximately 140 species in 36 genera have been described (Ewing 1984a). In the Gulf of California, the first record for this family was published by Fauvel (1943) who reported *Dasybranchus caducus* for San José Island (Baja California Sur). From the 34 species recorded so far, 12 have been originally described for the Gulf of California: *Notomastus lobatus* Hartman 1947, *N. sonorae* Kudenov 1975, *N. angelicae* n.sp., *Dasybranchus parplatyceps* Kudenov 1975, and *D. platyceps* Hartman 1947, in the continental shelf and *Notomastus abyssalis* Fauchald 1972, *N. cinctus* Fauchald 1972, *Leiochrides hemipodus* Hartman 1960, *Neoheteromastus lineus* Hartman 1960, *Neomediomastus glabrus* (Hartman 1960), *Neonotomastus glabrus* Fauchald 1972, and *Notodasus magnus* Fauchald 1972, in deep waters. This relatively high species richness can be partly explained both by considering the geographic situation of the Gulf of California, which allows the confluence of tropical, subtropical and temperate waters, as well as its extended littorals with contrasting environmental conditions.

### Material and Methods

The specimens were collected on board R/V *El Puma* (UNAM) as part of the institutional "CORTES" project in March 1985. A Smith-McIntyre grab was used to collect the sediment which was then sieved through a 0.5 mm sieve. Following fixation with 10% formalin, the organisms were separated, identified and preserved in 70% ethanol.

The holotype of *N. angelicae* as well as some paratypes were deposited in the National Museum of Natural History, Smithsonian Institution, Washington, D.C. (USNM) collection. Additional paratypes are deposited in Natural History Museum of Los Angeles County (LACM), Australian Museum (AM), British Natural History Museum (BNHM), and in the Polychaete Collection of the Instituto de Ciencias del Mar y Limnología, UNAM (CP-ICMyL), where the other identified species are also deposited.

The habitat data for each species are abbreviated as follows: D = depth in meters, T = temperature in °C, S = salinity in ‰, OM = organic matter content in the sediments in ‰, and DO = dissolved oxygen in ml/l.

### Results

In this study, 428 capitellids (11 species in six genera) were collected and identified from the continental shelf of the Gulf of California.

#### *Decamastus nudus* Thomassin, 1970

*Decamastus nudus* Thomassin, 1970:81, figs. 6a–c.

*Material examined.*—21 specimens: Rocas Consag, 30°59.4'N, 114°04.1'W, sta. 39, 106.4 m, silty sands, 16 Mar 1985 (1 specimen). North Tiburón Island; 29°23.3'N, 112°30.7'W, sta. 26, 71.9 m, fine sands, 14 Mar 1985 (7 specimens). San Miguel Cape, 28°08.0'N, 112°45.8'W, sta. 20, 54.1 m, fine sands, 13 Mar 1985 (10 specimens). Santa

María Bay; 25°02.4'N, 108°31.7'W, sta. 3, 32 m, fine sands, 10 Mar 1985 (3 specimens).

*Habitat.*—Coarse substrates, coralline sands next to marine phanerogam meadows (Thomassin 1970). In this study it was collected in fine and silty sands; D = 32.0–106.4; T = 13.2–14.4; S = 35.04–35.35; OM = 1.5–5.7; DO = 1.02–3.25.

*Distribution.*—Southwestern Madagascar (Thomassin 1970). North of Sonora, west of Santa María Bay, Sinaloa, and north of Santa Rosalía, Baja California Sur.

#### *Leiocapitella glabra* Hartman, 1947

*Leiocapitella glabra* Hartman, 1947:438, pl. 54, figs. 1–3.—Ewing, 1984a:14.45, figs. 14.39, 14.40 a–d.—not Day, 1973: 100 type Ewing, 1984a.

*Material examined.*—59 specimens: Rocas Consag, 30°59.4'N, 114°04.1'W, sta. 39, 106.4 m, silty sands 16 Mar 1985 (6 specimens). Tepoca Cape, 30°02.4'N, 112°55.4'W, sta. 44, 104.1 m, silty sands, 17 Mar 1985 (4 specimens). Punta Arboleda, 26°46.6'N, 110°06.7'W, sta. 14, 92 m, medium sands, 12 Mar 1985 (10 specimens). Santa Inés Bay, 26°59.4'N, 111°53.5'W, sta. 49B, 68.8 m, 19 Mar 1985 (26 specimens). Santa Inés Bay, 26°59.6'N, 111°50.4'W, sta. 49A, 100 m, fine sands, 19 Mar 1985 (13 specimens).

*Habitat.*—53 to 100 m (Hartman 1947), silty clay sediments (Ewing 1984a). In this study it was collected in fine, medium and silty sands; D = 68.6–106.4; T = 13.2–14.2; S = 35.09–35.26; OM = 3.0–7.2; DO = 0.92–2.40.

*Distribution.*—Northern Gulf of Mexico (Ewing 1984a). Southern California; in the Gulf of California it has been reported in the Baja California eastern shores (Hartman 1947). Continental shelf of northern and southern Sonora, and west of Santa Inés Bay, Baja California Sur.

#### *Leiochrides hemipodus* Hartman, 1960

*Leiochrides hemipodus* Hartman, 1960:136; 1963:22; 1969:381, fig. 1.—Fauchald, 1972:242–243.

*Material examined.*—1 specimen: Punta Arboleda, 26°46.6'N, 110°06.7'W, sta. 14, 92 m, medium sands, 12 Mar 1985 (1 specimen).

*Habitat.*—Abyssal basins and canyons in muddy greenish sediments, with siliceous sponges (Hartman 1969). In this study it was collected in medium sands; D = 92.0; T = 13.6; S = 35.09; OM = 5.3; DO = 0.92.

*Distribution.*—Southern California (Hartman 1969). In the Mexican Pacific, it has been collected in deep waters in front of Jalisco and Baja California (Hartman 1963), and Baja California Sur coasts (Fau-chald 1972). Punta Arboleda, Sonora, coasts.

*Mastobranthus ?variabilis* Ewing, 1984

*Mastobranthus* sp. A.—Ewing, 1984a: 14.35, figs. 14.29, 14.30a–f.

*Mastobranthus variabilis* Ewing, 1984b: 793–796, figs. 1a–d.

*Material examined.*—6 specimens: El Fuerte River, 25°42.1'N, 109°30.6'W, sta. 51, 49.5 m, silty sands 20 Mar 1985 (2 specimens). María Madre Island, 21°38.2'N, 106°31.9'W, sta. 62C, fine sands, 22 Mar 1985 (4 specimens).

*Remarks.*—The specimens analyzed are incomplete with a maximum of 41 setigers, which makes it impossible to confirm the presence of branchiae. According to the original description, they should be present in the middle-posterior region of the abdomen as eversible “groups” of 5–8 cirriform filaments emerging from the posterior region of the notopodial uncinigers. The presence of capillary setae accompanying hooded hooks in most of the abdominal segments also could not be ascertained. However, the two other described species which belong to this genus, *M. trinchessii* Eisig 1887 and *M. loii* Gallardo 1968, have a biramous first setiger, among other major differences with the specimens collected here. This led us to name the organisms as *M. ?variabilis*.

*Habitat.*—9.7 to 58 m, in sands (Ewing 1984b). In this study it was collected in fine and silty sands; D = 29.7–49.5; T = 14.8–22.1; S = 35.10–35.15; OM = 4.2–7.2; DO = 1.80–5.29.

*Distribution.*—Alabama and Florida, northern Gulf of Mexico, North Carolina shores (Ewing 1984b). West of El Fuerte River, Sinaloa, and María Madre Island, Nayarit.

*Mediomastus californiensis* Hartman, 1944

*Mediomastus californiensis* Hartman, 1944: 264, pl. 6, figs. 64–65; 1947:408, pl. 46, figs. 3–4; 1969:387, figs. 1–4.—Day, 1973:99.—Hutchings & Rainer, 1979: 779.—Hobson & Banse, 1981:66.—Ewing, 1984a:14.14, figs. 14.9, 14.10a–c.

*Material examined.*—2 specimens: Tepoca Cape, 30°08.6'N, 112°08.6'W, sta. 43, 68.8 m, silty sands 17 Mar 1985 (1 specimen). Punta Willard, 30°11.5'N, 114°31.7'W, sta. 34, 32.9 m, sandy silty clay, 15 Mar 1985 (1 specimen).

*Habitat.*—Intertidal to 517 m, commonly found in fine, muddy sands (Ewing 1984a). In this study it was collected in silty sands and muds; D = 32.9–68.8; T = 15.1–15.2; S = 35.38–35.45; OM = 6.9–8.9; DO = 3.03–4.30.

*Distribution.*—Central and southern California (Hartman 1969); from North Carolina to Florida; northern Gulf of Mexico, Australia (Ewing 1984a). Baja California coasts (Hartman 1963), Baja California Sur (De León-González 1994), Sinaloa (Salarz-Vallejo 1981, Van Der Heiden & Hendrickx 1982, Arias-González 1984), and Jalisco (Varela-Hernández 1993). Northern Gulf of California.

*Notomastus americanus* Day, 1973

*Notomastus americanus* Day, 1973:100, figs. 131–n.—Ewing, 1984a:14.31, figs. 14.25, 14.26a–d.

*Material examined.*—61 specimens: Rocas Consag, 30°59.4'N, 114°04.1'W, sta. 39,

106.4 m, silty sands, 16 Mar 1985 (12 specimens). Tepoca Cape, 30°02.4'N, 112°55.4'W, sta. 44, 104.1 m, silty sands, 17 Mar 1985 (8 specimens). Punta Willard, 30°11.5'N, 114°31.7'W, sta. 34, 32.9 m, sandy silty clay, 15 Mar 1985 (1 specimen). Punta Arboleda, 26°51.1'N, 110°06.5'W, sta. 15, 49.8 m, 12 Mar 1985 (13 specimens). Punta Arboleda, 26°46.6'N, 110°06.7'W, sta. 14, 92 m, medium sands, 12 Mar 1985 (1 specimen). El Fuerte River, 25°42.1'N, 109°30.6'W, sta. 51, 49.5 m, silty sands, 20 Mar 1985 (2 specimens). El Fuerte River, 25°46.8'N, 109°35.4'W, sta. 50, 97.0 m, silty sands, 20 Mar 1985 (4 specimens). Santa Inés Bay, 26°59.6'N, 111°50.4'W, sta. 49A, 100 m, fine sands, 19 Mar 1985 (3 specimens). Punta San Marcial, 25°58.6'N, 111°06.9'W, sta. 10, 39 m, very fine sands, 11 Mar 1985 (4 specimens). Santa María Bay; 25°02.4'N, 108°31.7'W, sta. 3, 32 m, fine sands 10 Mar 1985 (1 specimen). Santa María Bay; 24°56.9'N, 108°41.8'W, sta. 4, 79 m, silty sands, 10 Mar 1985 (4 specimens). María Madre Island, 21°38.2'N, 106°31.9'W, sta. 62C, fine sands, 22 Mar 1985 (8 specimens).

*Remarks.*—In small specimens, sometimes we observed a mixture of hooks and acicular setae in the neuropodia of setiger 10, as Ewing (1984a) noted. In the same fashion, in some small organisms, the same feature can be observed but in the neuropodia of eleventh setiger.

*Habitat.*—35 to 100 m, in fine to very fine sands to coarse sands (Ewing 1984a). In this study, it was collected in fine, medium and silty sands, and muds; D = 29.7–106.4; T = 13.2–22.1; S = 34.99–35.51; OM = 3.0–7.2; DO = 0.80–5.29.

*Distribution.*—North Carolina (Day 1973); northern Gulf of Mexico (Ewing 1984a). In the Mexican Pacific it has been reported from the Jalisco coasts (Varela-Hernández 1993), upper Gulf of California, southern Sonora, northern Sinaloa, and central Baja California Sur.

*Notomastus hemipodus* Hartman, 1945

*Notomastus (Clistomastus) hemipodus* Hartman, 1945:38; 1947:424, pl. 48, figs. 1–5; 1951:103, pl. 24, figs. 1–3; 1969:393, figs. 1–5.

*Notomastus hemipodus.*—Day, 1973:100.—Ewing, 1984a:14.28, figs. 14.23, 14.24a–d.

*Material examined.*—63 specimens: Rocas Consag, 31°16.1'N, 114°21.7'W, sta. 37, 30.3 m, fine sands, 16 Mar 1985 (11 specimens). Rocas Consag, 30°59.4'N, 114°04.1'W, sta. 39, 106.4 m, silty sands, 16 Mar 1985 (5 specimens). Punta Willard, 30°11.5'N, 114°31.7'W, sta. 34, 32.9 m, sandy silty clay, 15 Mar 1985 (2 specimens). Punta Arboleda, 26°53.2'N, 110°04.1'W, sta. 16, 22.2 m, fine sands, 12 Mar 1985 (3 specimens). Punta Arboleda, 26°51.1'N, 110°06.5'W, sta. 15, 49.8 m, 12 Mar 1985 (20 specimens). Santa Inés Bay, 26°59.6'N, 111°50.4'W, sta. 49A, 100 m, fine sands, 19 Mar 1985 (7 specimens). Punta San Marcial, 25°58.6'N, 111°06.9'W, sta. 10, 39 m, very fine sands, 11 Mar 1985 (13 specimens). Santa María Bay; 24°56.9'N, 108°41.8'W, sta. 4, 79 m, silty sands, 10 Mar 1985 (2 specimens).

*Habitat.*—Intertidal to 120 m, in muds and muddy sands (Ewing 1984a). At 30 m and 30°C, 0.31% organic carbon, in sandy muds (González-Ortiz 1994). In this study it was collected in fine, medium and silty sands and muds; D = 22.2–106.4; T = 13.2–17.5; S = 35.00–35.51; OM = 2.4–6.9; DO = 0.80–5.40.

*Distribution.*—North Carolina (Day 1973); northern Gulf of Mexico (Ewing 1984a); southern California (Hartman 1969). In the Mexican Pacific it has been collected in the Jalisco coasts (Varela-Hernández 1993), and the Gulf of Tehuantepec (González-Ortiz 1994). Northern and central Gulf of California.

*Notomastus latericeus* Sars, 1851

*Notomastus latericeus.*—Fauvel, 1927:143, figs. 49a–h.—Day, 1967:599, figs. 28.2a–

d.—Gallardo, 1968:120, pl. 53, fig. 13.—  
Thomassin, 1970:83, figs. 8a–e.—Ewing,  
1984a:14.26, figs. 14.29, 14.20a–e.

*Material examined.*—20 specimens: Te-  
poca Cape, 30°02.4'N, 112°55.4'W, sta.  
44, 104.1 m, silty sands, 17 Mar 1985 (5  
specimens). Punta Willard, 30°11.5'N,  
114°31.7'W, sta. 34, 32.4 m, sandy silty  
clay, 15 Mar 1985 (1 specimen). Estero  
Tastiota, 28°17.8'N, 111°37.1'W, sta. 47,  
36.9 m, 18 Mar 1985 (1 specimen). Punta  
Arboleda, 26°51.1'N, 110°06.5'W, sta. 15,  
49.8 m, 12 Mar 1985 (3 specimens). Santa  
Inés Bay, 26°59.4'N, 111°53.5'W, sta.  
49B, 68.8 m, 19 Mar 1985 (1 specimen).  
Santa María Bay; 25°02.4'N, 108°31.7'W,  
sta. 3, 32 m, fine sands, 10 Mar 1985 (6  
specimens). Banco Gorda, 23°06.6'N,  
109°24.3'W, sta. 56, 101 m, fine sands, 21  
Mar 1985 (3 specimens).

*Habitat.*—Intertidal to 4360 m; in very  
different kinds of sediments (Ewing 1984a).  
In this study it was collected in fine and  
silty sands and muds; D = 32.0–104.1; T  
= 13.7–15.1; S = 34.80–35.38; OM = 5.7–  
7.2; DO = 1.02–4.30.

*Distribution.*—Cosmopolitan (Ewing  
1984a). Sonora coasts, northern Sinaloa,  
and northern and southern coasts of Baja  
California.

*Notomastus lineatus* Claparede, 1870

*Notomastus (Clistomastus) lineatus* Clapa-  
réde, 1870:18, pl. 17, fig. 4.—Hartman,  
1947:419, pl. 46, figs. 1–2; 1969:395,  
figs. 1–5.

*Notomastus lineatus.*—Fauvel, 1927:145,  
figs. 51a–i.—Hobson and Banse, 1981:  
66.—Ewing, 1984a:14.24, figs. 14.17,  
14.18a–e.

*Material examined.*—51 specimens: Te-  
poca Cape, 30°12.2'N, 112°46.9'W, sta. 42,  
29.9 m, fine sands, 17 Mar 1985 (18 spec-  
imens). El Fuerte River, 25°39.9'N,  
109°30.6'W, sta. 51, 49.5 m, silty sands, 20  
Mar 1985 (1 specimen). San Miguel Cape,  
28°10.4'N, 112°48.1'W, sta. 19, 30.4 m,

coarse sands, 13 Mar 1985 (14 specimens).  
San Miguel Cape, 28°08.0'N, 112°45.8'W,  
sta. 20, 54.1 m, fine sands, 13 Mar 1985 (3  
specimens). Santa Inés Bay, 26°59.2'N,  
111°58.3'W, sta. 49C, 28.9 m, very fine  
sands, 19 Mar 1985 (1 specimen). Punta  
San Marcial, 25°33.4'N, 110°59.8'W, sta. 8,  
52 m, fine sands, 11 Mar 1985 (2 spec-  
imens). Punta San Marcial, 25°47.8'N,  
111°03.8'W, sta. 9, 77.5 m, fine sands, 11  
Mar 1985 (1 specimen). Banco Gorda,  
23°08.7'N, 109°28.3'W, sta. 55, 32.5 m, fine  
sands, 21 Mar 1985 (11 specimens).

*Habitat.*—Shallow subtidal to 298 m, in  
fine to coarse sands, sandy gravel and coral  
rubble (Ewing 1984a). In this study it was  
collected in fine, medium and coarse sands;  
D = 28.9–77.5; T = 13.6–21.3; S = 34.70–  
35.54; OM = 1.8–7.2; DO = 1.80–5.11.

*Distribution.*—Mediterranean Sea (Fau-  
vel 1927); northern Gulf of Mexico (Ewing  
1984a); Panama, Antarctic Ocean, from  
Canada to California (Hartman 1969). In  
the Mexican Pacific, reported from Todos  
los Santos Bay, Baja California Sur (Sala-  
zar-Vallejo 1985), and in Sinaloa coasts  
(Van Der Heiden & Hendrickx 1982).  
Mainly present in Baja California Sur lit-  
torals.

*Notomastus tenuis* Moore, 1909

*Notomastus (Clistomastus) tenuis.*—Hart-  
man, 1947:420, pl. 47, figs. 1–5; 1969:  
397, figs. 1–5.

*Notomastus tenuis.*—Hobson & Banse,  
1981:66.

*Notomastus ? tenuis.*—Ewing, 1984a:14–  
26, figs. 14.21, 14.22a–e.

*Material examined.*—100 specimens:  
Rocas Consag, 31°08.3'N, 114°13.3'W, sta.  
38, 71.9 m, 16 Mar 1985 (4 specimens).  
Estero Tastiota, 28°16.4'N, 111°36.6'W, sta.  
48, 60.2 m, fine sands, 18 Mar 1985 (5  
specimens). Punta Arboleda, 26°46.6'N,  
110°06.7'W, sta. 14, 92 m, medium sands,  
12 Mar 1985 (5 specimens). El Fuerte Riv-  
er, 25°39.9'N, 109°28.6'W, sta. 52, 28.6 m,  
silty sands, 20 Mar 1985 (5 specimens). El

Fuerte River, 25°42.1'N, 109°30.6'W, sta. 51, 49.5 m, silty sands, 20 Mar 1985 (8 specimens). El Fuerte River, 25°46.8'N, 109°35.4'W, sta. 50, 97 m, silty sands, 20 Mar 1985 (5 specimens). San Miguel Cape, 28°07.7'N, 112°42.1'W, sta. 21, 104.1 m, 13 Mar 1985 (2 specimens). Santa Inés Bay, 26°59.2'N, 111°58.3'W, sta. 49C, 28.9 m, very fine sands, 19 Mar 1985 (5 specimens). Santa María Bay; 25°02.4'N, 108°31.7'W, sta. 3, 32 m, fine sands, 10 Mar 1985 (5 specimens). Santa María Bay; 24°54.6'N, 108°45.3'W, sta. 5, 120 m, silty sands, 10 Mar 1985 (2 specimens). Punta Mita, 20°53.9'N, 105°27.5'W, sta. 61, 50.4 m, fine sands, 23 Mar 1985 (6 specimens). María Madre Island, 21°38.2'N, 106°31.9'W, sta. 62C, 29.7 m, fine sands, 22 Mar 1985 (48 specimens).

*Habitat*.—Intertidal to depths of 379 m, in muddy and sandy substrates (Hartman 1969). In this study it was collected in fine, medium and silty sands; D = 28.6–120.0; T = 12.9–22.1; S = 34.92–35.45; OM = 3.6–7.2; DO = 0.54–5.40.

*Distribution*.—From Canada to California (Hartman 1969); northern Gulf of Mexico? (Ewing 1984a). In the Mexican Pacific, collected in the littorals of Baja California Sur (Rioja 1962, De León-González 1994), Sinaloa (Salazar-Vallejo 1981, Van Der Heiden & Hendrickx 1982), and in deeper zones from Baja California, Baja California Sur, Nayarit, and Jalisco (Fauchald 1972). It is found practically along the entire continental shelf of the Gulf of California.

*Notomastus angelicae*, new species

Figs. 1a–d, 2, 3

*Material examined*.—44 specimens, Location: littoral, west of El Fuerte River, Sinaloa, México (25°39'54"N, 109°28'36"W), at a depth of 28.6 m. Holotype (USNM: 180697) and 5 paratypes (USNM: 180698); 5 paratypes (LACM-AHF-POLY-1902); 5 paratypes (A.M.: W24586); 5 paratypes (BNHM.: 1998.786-790); and 23 paratypes (CP-ICMyL: POP-17-001).

*Description*.—Holotype incomplete with 48 setigers, 15 mm long and 0.75 mm wide. Thorax length 3 mm. Paratypes with 21 to 40 setigers (mean =  $29.48 \pm 5.43$ ), 7.5 to 13 mm total length (mean =  $10.0 \pm 2.12$ ), and 0.75 to 1 mm width (mean =  $0.76 \pm 0.12$ ).

Color of preserved specimens yellowish to light brown. Thorax slightly enlarged in first four to five setigers (Fig. 1a); epithelial surface clearly areolated as rhomboids in first four setigers (Fig. 2), following setigers smooth except for segmental biannulation. Inferior region of thorax from setigers 1–11 enlarged (Fig. 1b), as a consequence a middle longitudinal groove appears to be present. Abdominal epithelium smooth.

Prostomium short, a small triangular terminal palpode and two elongate ocular patches in posterior region (Fig. 1a). Peristomial ring achaetous, almost twice as long as following setigers. Eversible pharynx papillose.

Anterior thoracic notopodia dorsolateral, from setiger 7 widely separated. First setiger biramous. Only capillary setae in first ten setigers (10–20 per fascicle); last thoracic segment (setiger 11) with capillary setae in notopodia and only hooded multidentate hooks (14–16) in neuropodia (Figs. 1c, 3).

Nephridial apertures located in segmental groove between each thoracic segment. Lateral organs present on all thoracic segments between noto- and neuropodium (Fig. 3). Transition from thorax to abdomen is apparent by size changes in segments, the presence of a hump-like protuberance in each segment and notopodial hooded hooks (Fig. 1a). Only multidentate hooded hooks in abdominal tori (Fig. 1d). Length of tori and hook number increase in neuropodia and diminish in notopodia towards posterior region. No branchiae.

Abdomen with a large rounded dorso-transverse hump-like structure (Fig. 1e). Initially, tori located in middle part of segments but migrating gradually towards pos-

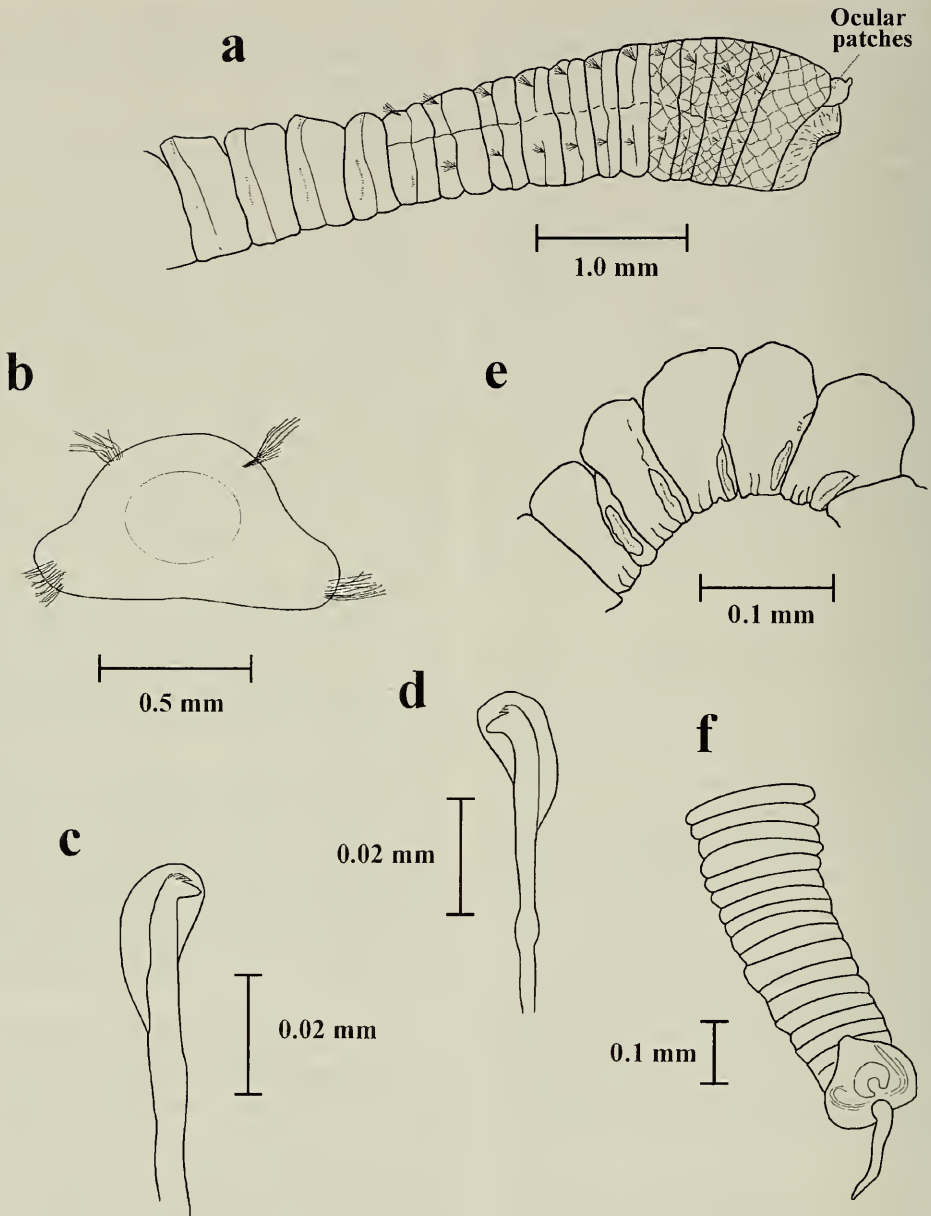


Fig. 1. *Notomastus angelicae*, new species: a, thoracic and anterior abdominal region, lateral view; b, transverse section of fourth setiger; c, thoracic multidentate hooded hook; d, abdominal multidentate hooded hook; e, midabdominal segments, lateral view; f, pygidium of a regenerating organism.

terior region of the segment until they almost reach the intersegmental line.

Pygidium unknown in all but one specimen with 23 setigers well developed and a posterior regenerating region of 44 segments with a pygidium. However, due to

regeneration the shape could be somewhat atypical: it is tube-like with terminal part heart-shaped and a median digitiform cirrus (Fig. 1f).

*Habitat*.—Specimens found at 28.6 m, in silty sands, 35.19 ‰ salinity, 16.8°C tem-



Fig. 2. SEM Prostomium and anterior thoracic region (peristomium) from *Notomastus angelicae*.

perature, 5.4 ml/l dissolved oxygen and 3.6% of organic matter.

**Distribution.**—*Notomastus angelicae* is only present in the eastern coasts of the Gulf of California, west of El Fuerte River, Sinaloa.

**Etymology.**—The species is named after Angélica Hernández Huitrón, niece of one of us (P H-A).

**Gender.**—Feminine.

**Remarks.**—Ewing (1984b) indicates that in the genus *Notomastus*, as well as in other capitellid genera, during setal development the thoracic hooks are gradually replaced by capillary setae in the middle-posterior region of thoracic neuropodia.

As organisms reach adulthood, in some neuropodia a mixture of capillary setae and hooks appear; this arrangement is only

present in one specimen analyzed with hooded hooks in setiger 10; the other 43 specimens only have hooks in neuropodia of setiger 11.

Genus *Notomastus* Sars, 1851 was emended by Ewing (1982) to include capitellids with 11 thoracic setigers with only capillary setae on both rami or with neuropodial hooks in last 1–3 thoracic setigers. *Notomastus angelicae* differs from most species in the genus by having hooks in one thoracic neuropodium instead of only capillary setae in both thoracic rami. From the species with hooks in one or two thoracic neuropodia, none presents a prostomial palpode, and from those, *N. precocis* Hartman, 1960, *N. teres* Hartman, 1965, *N. mossambicus* (Thomassin 1970), *N. americanus* Day, 1973 and *Notomastus* sp. A Ewing,





Fig. 3. SEM Setigers 10 and 11, lateral view from *Notomastus angelicae*.

1984, all have only notopodia in first setiger (Table 1).

*Notomastus daueri* Ewing, 1982, described from the northern Gulf of Mexico, is the only species in the genus with hooks in some thoracic neuropodia and first setiger complete. *Notomastus angelicae* differs from it basically by the presence of the prostomial palpode, ocular spots, the abdominal neuropodial shape and the well defined areolated area in the anterior thoracic re-

gion. The only species of the group with branchiae is *N. daueri*; however, these structures could not be seen here since the specimens are incomplete.

#### Key to the Capitellids from the Gulf of California

1. Thorax with ten setigers . . . . . 2
- Thorax with more than ten setigers . . 3
2. Thoracic setigers with capillary setae

- only; first setiger incomplete, with noto-  
setae only . . . . . *Decamastus nudus*
- Setigers 1–4 with capillary setae; first  
setiger complete, with noto- and neu-  
rosetae . . . . . *Mediomastus californiensis*
- 3. Thorax with 11 setigers . . . . . 4
- Thorax with more than 11 setigers . . 10
- 4. Thoracic setigers with capillary setae  
only; abdominal notopodia with mixed  
fascicles of capillary setae and hooded  
hooks; first setiger incomplete . . . . .  
. . . . . *Mastobranthus ?variabilis*
- Thoracic setigers with capillary setae  
only in both rami or with hooks only in  
neuropodia of last 1–3 setigers; abdom-  
inal setigers with hooded hooks only  
. . . . . 5
- 5. First setiger complete . . . . . 6
- First setiger incomplete . . . . . 8
- 6. Last thoracic segment with capillary setae  
only in both rami . . . . . 7
- Last thoracic segment with capillary setae  
only in notopodia and hooded hooks  
only in neuropodia . . . . .  
. . . . . *Notomastus angelicae*
- 7. Nephridial apertures restricted to tho-  
rax; thoracic segments uniannulate . . .  
. . . . . *Notomastus lineatus*
- Nephridial apertures restricted to ab-  
domen; thoracic segments biannulate  
. . . . . *Notomastus latericeus*
- 8. All thoracic setigers with capillary setae  
only . . . . . 9
- Last thoracic neuropodia with hooded  
hooks only . . . . . *Notomastus americanus*
- 9. Prostomium with long ocular patches  
. . . . . *Notomastus tenuis*
- Prostomium with pair of minute (often  
inconspicuous) eyespots . . . . .  
. . . . . *Notomastus hemipodus*
- 10. Thorax with 12 setigers, all thoracic set-  
igers with capillary setae only; first set-  
iger incomplete . . . . . *Leiochrides hemipodus*
- Thorax with 14 setigers; setigers 1–13  
with capillary setae only in both rami,  
last thoracic setiger with capillary setae  
only in notopodia and hooded hooks  
only in neuropodia; first setiger incom-  
plete . . . . . *Leiocapitella glabra*

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Table 1.—Morphological characters commonly used to differentiate the species of *Notomastus* with hooks in some thoracic notopodia.

Character	<i>N. dauerti</i> Ewing 1982	<i>N. precoctis</i> Hartman 1960	<i>N. teres</i> Hartman 1965	<i>N. mossambicus</i> (Thomassin 1970)	<i>N. americanus</i> Day 1973	<i>Notomastus</i> sp. A Ewing 1994	<i>N. angelicae</i> , new species
Prostomial palpode	Absent	Absent	Absent	Absent	Absent	Absent	Present
Eyes or ocular spots	Absent	Absent	Absent	Present	Present	Present	Present
First setiger	Biramous	Uniramous	Uniramous	Uniramous	Uniramous	Uniramous	Biramous
Anterior thoracic ep- ithelium	Finely areolated	Plain	Plain	Areolated	Plain	Plain	Areolated
Hooded hooks	Neuropodium 11	Neuropodium 9–11	Neuropodium 10–11	*Neuropodium 11	*Neuropodium 11	*Neuropodium 10–11	Neuropodium 11
Branchiae	Present (around setiger 60)	Absent	Absent	Absent	Absent	Absent	?

\* In juveniles of these species hooded hooks or a mixture of capillary setae and hooks in setigers 9–11 can be present.

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